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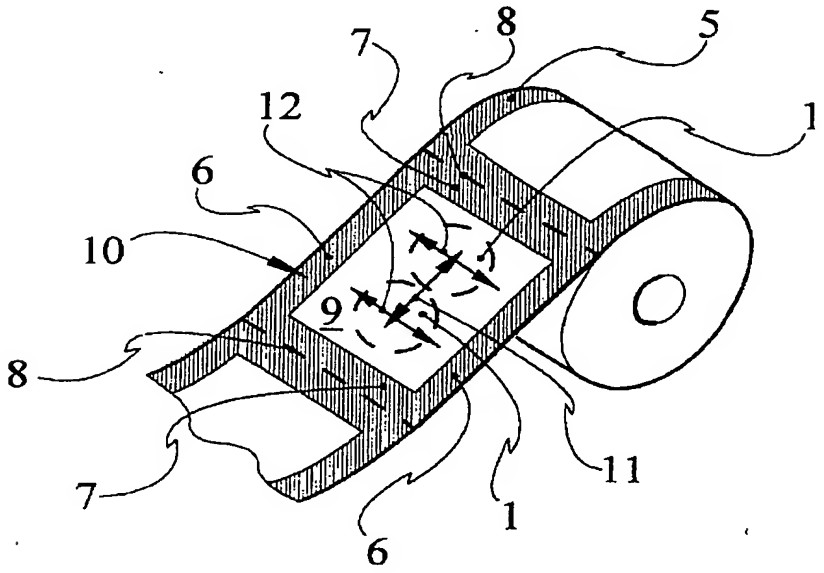
(54) **EMBALLAGE POUR PRODUITS EN FORME DE COMPRIMES ET METHODE POUR SA FABRICATION**

(54) **PACK FOR TABLET-FORM PRODUCTS AND A PROCESS FOR ITS PRODUCTION**



(57) A pack for tablet-form products, more particularly hygroscopic detergent tablets, of a closed substantially rectangular film bag accommodating at least one tablet is intended to enable the tablets to be exactly and safely positioned in the pack without significantly adding to the production and packaging costs. To this end, the film bag (2) in its zone of contact (9) with the at least one tablet (1) is coated at least locally with a friction-increasing nonslip coating (13).

Abstract

A pack for tablet-form products, more particularly hygroscopic detergent tablets, of a closed substantially rectangular film bag accommodating at least one tablet is intended to enable the tablets to be exactly and safely positioned in the pack without significantly adding to the production and packaging costs.

To this end, the film bag (2) in its zone of contact (9) with the at least one tablet (1) is coated at least locally with a friction-increasing nonslip coating (13).

Pack for Tablet-form Products and a Process for its Production

This invention relates to a pack for tablet-form products, more particularly hygroscopic detergent tablets, of a closed substantially rectangular film bag in which at least one tablet is accommodated and to a process for the production of this pack.

Hygroscopic detergent tablets have to be packed in moisture-proof packs, for example tubular film bags. The packs in question are normally so-called flow packs. Normally, such tablets are individually packed, i.e. a corresponding number of tablets are introduced into the washing process from individual packs, according to portioning and depending on the water hardness and the degree of soiling. To this end, the film bags have to be individually opened and the disposed of.

With certain detergent tablets, the basic dose is two or more tablets. Accordingly, taking packaging costs and user friendliness in account, a bag capable of accommodating two or more tablets is useful for such applications. A bag such as this is normally made from a section of film web, for example of polypropylene film, the film web section being coated with an adhesive, for example a cold adhesive, along its longitudinal edges and at both transverse ends of the section of film web to be subsequently cut to length and that part of the film web section which will be in contact with the tablets being left uncoated. The tablets are then applied and the film section is folded or wrapped about its longitudinal axis so that the two longitudinal edges coated with adhesive and the transverse ends likewise coated with adhesive come to lie on top of one another and form a closed film bag with longitudinal and transverse fins which is separated from the other film bags similarly formed from the film web by cutting along the transverse ends.

Due to this method of production and packaging, the tablets are loosely accommodated in the film bag which could be avoided by not

overdimensioning the section of film web. However, this would make production very difficult or even impossible and might even lead to tablet damage. Since, therefore, the film bag is inevitably larger to a certain extent than the volume of the tablet, it has been found in practice that it is difficult, particularly with tablets having a preferably granular surface structure, for example laundry detergent tablets or dishwasher tablets, to portion the tablets exactly by machine at the high tablet-wrapping rates of modern flow pack machines. This means that, for example where two tablets are accommodated in one and the same bag, the tablets can easily slide in the longitudinal and transverse directions on the smooth film. This results in unevenness on the upper side of the bag which leads to machine malfunctions during the subsequent grouping of the filled bags (flow packs) and their introduction into a cardboard box by suction lifters. This is because the suction lifters are unable to operate properly. In addition, the fact that the tablets are able to move in the pack during transportation and even in storage poses the risk of abrasion and, in extreme cases, even edge breakage or tablet fracture.

The problem addressed by the invention was to find a way of enabling the tablets to be exactly and safely positioned in the pack without significantly adding to the production and packaging costs.

In a pack of the type mentioned at the beginning, the solution to this problem as provided by the invention is characterized in that, in its zone of contact with the at least one tablet, the film bag is coated at least locally with a friction-increasing nonslip coating.

By applying such a coating to the film web section during the production of the pack, which is easy to do, it is possible for example selectively to increase the coefficient of static friction of the film (for example from 0.467 μ for a normal polypropylene film to 0.544 μ with a suitable coating) so that a clear improvement in productivity is achieved without a significant increase in production and packaging costs. The

tablets are no longer able to move, i.e. remain exactly in position.

In a pack in which the film bag is formed from a folded film web section coated with adhesive along its longitudinal edges and at both transverse ends, the friction-increasing nonslip coating is formed with particular advantage by a coating of adhesive. The adhesive used for this coating may preferably be the same adhesive used to coat the longitudinal and transverse edges of the film web section so that the coatings may be applied in a single operation, enabling the process as a whole to be carried out virtually unchanged at substantially the same cost.

In order not to complicate removal of the tablets from the film bag by the user of the product, the coating is only applied locally, preferably in the form of spots and/or lines.

To produce a film bag from a section of film web, the invention also provides a process in which a rectangular film web section is coated with adhesive along its longitudinal edges and at both transverse ends, the at least one tablet is placed in the zone between the longitudinal edges and the transverse ends and the film web section is then folded about its longitudinal axis so that the adhesive-coated longitudinal edges and transverse ends lie on top of one another and the closed film bag thus formed is cut along the two transverse ends to form transverse edges, the process being characterized in that that part of the film web section which accommodates the at least one tablet is also coated at least locally with adhesive.

The invention is described in more detail in the following with reference to the accompanying drawings, wherein:

Figure 1 is a perspective view of an adhesive-coated film web for the production of a film bag in accordance with the prior art.

Figure 2 is a partial side elevation of a pack according to the invention.

Figures 3 to 5 are perspective views of a film web with differently designed friction-increasing nonslip coatings for the production of a pack

according to the invention.

A pack for tablet-form products, more particularly hygroscopic detergent tablets 1, comprises a closed substantially rectangular film bag 2. At both transverse edges 3, of which only one is shown in Fig. 2, the film bag 2 is closed by a coating of adhesive to form a so-called transverse fin. Longitudinally, the film bag 2 formed from a film web is closed by a so-called longitudinal fin 4, as explained in more detail hereinafter. The film bag 2 preferably accommodates two tablets 1. According to the invention, the rear zone of contact (not visible in the drawing) of the tablets 1 with the inside of the film bag 2 is provided with a friction-increasing nonslip coating, as will be explained in more detail hereinafter.

According to the prior art, a film bag 2 without the friction-increasing nonslip coating according to the invention is normally made from a film web, for example of polypropylene film, as shown in Fig. 1. One such film web is denoted by the reference numeral 5 in Fig. 1. It is provided with a coating of adhesive along its longitudinal edges 6 and transverse ends 7 which form the transverse edges 3 of the film bag 2 after subsequent separation along the chain lines 8. A substantially rectangular region – denoted by the reference numeral 9 - of such a film web section 10 remains uncoated in the prior art, two tablets 1, for example, being applied to that region.

However, at the high tablet-wrapping rates of modern flow pack machines, the problem exists that the tablets 1 cannot be exactly positioned. In addition, they can easily shift longitudinally (double arrow 11) and transversely (double arrow 12) in the region 9 so that, as the packaging process continues, unevenness develops on the upper surface of the bag and leads to machine malfunctions during the subsequent grouping of the already packed film bags 2 and their introduction into a cardboard box by suction lifters. This is because the suction lifters are unable to work properly. In addition, because the tablets 1 are able to shift

in the film bag 2, tablet abrasion and edge breakage can occur.

The film bag 2 shown in Fig. 2 is made from a film web 5 according to Figs. 1 and 3 to 5 by applying the adhesive coating along the longitudinal edges 6 and the transverse edges 7, placing the tablets 1 in the zone 9 and then folding the particular film web section 10 about its longitudinal axis (double arrow 11) so that the two adhesive-coated longitudinal edges 6 lie on top of one another to form a two-layer longitudinal fin 4. At the same time, the transverse ends 7 are also folded adhesively together and then separated along the lines 8, after which the packed film bag 2 is finished.

To produce a pack according to the invention (cf. Fig. 3), a friction-increasing nonslip coating is applied to the contact zone 9 which is denoted by the reference numeral 13 in Fig. 3. The coating in question is preferably another adhesive coating which is applied at the same time as the adhesive coatings on the longitudinal edges 6 and transverse ends 7. The adhesive is preferably a cold adhesive. When the tablets 1 are subsequently placed on the region 9 thus partly coated, they automatically adhere to the region 13 of the film so that they are exactly and safely positioned. However, the subsequent removal of the tablets 1 from a packed film bag 2 is not difficult because the coating 13 is only locally applied.

The coating 13 can assume different forms, as shown for example in Figs. 4 and 5. Thus, the coating 13 may be locally applied in the form of spots and/or lines; other coating patterns are of course also possible.

Basically, the simplest solution is to form the friction-increasing nonslip coating by an adhesive coating which is used together with the adhesive coating to make the particular film web section 10 into a closed film bag 2. However, any other locally friction-increasing nonslip coating may also be applied to the region 9 in accordance with the invention.

CLAIMS

1. A pack for tablet-form products, more particularly hygroscopic detergent tablets, of a closed substantially rectangular film bag in which at least one tablet is accommodated, characterized in that, in its zone of contact (9) with the at least one tablet (1), the film bag (2) is provided at least locally with a friction-increasing nonslip coating (13).

2. A pack as claimed in claim 1 in which the film bag is formed from a folded film web section coated with adhesive along its longitudinal edges and at both transverse ends, characterized in that the friction-increasing nonslip coating(13) is formed by a coating of adhesive.

3. A pack as claimed in claim 1 or 2, characterized in that the friction-increasing nonslip coating (13) is applied in the form of spots and/or lines.

4. A process for the production of the pack claimed in claim 2 or 3 in which a rectangular film web section is coated with adhesive along its longitudinal edges and at both transverse ends, the at least one tablet is placed in the zone between the longitudinal edges and transverse ends and the film web section is then folded about its longitudinal axis so that the adhesive-coated longitudinal edges and transverse ends lie on top of one another and the closed film bag thus formed is cut along the two transverse ends to form transverse edges, characterized in that that part of the film web section which accommodates the at least one tablet is also coated at least locally with adhesive.

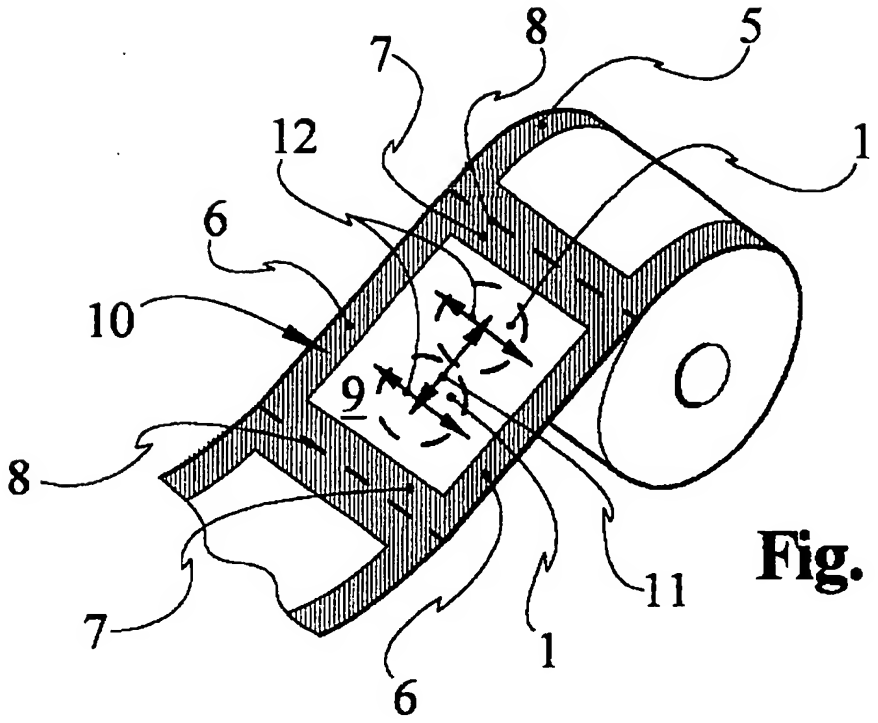


Fig. 1

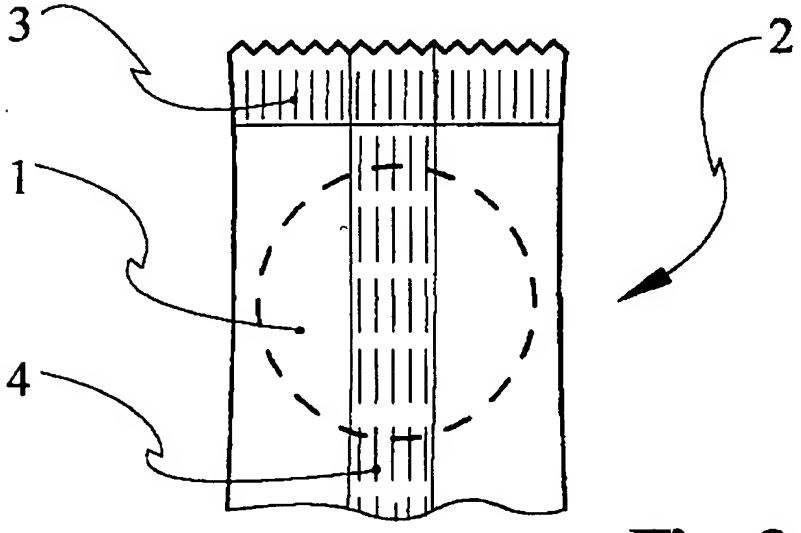


Fig. 2

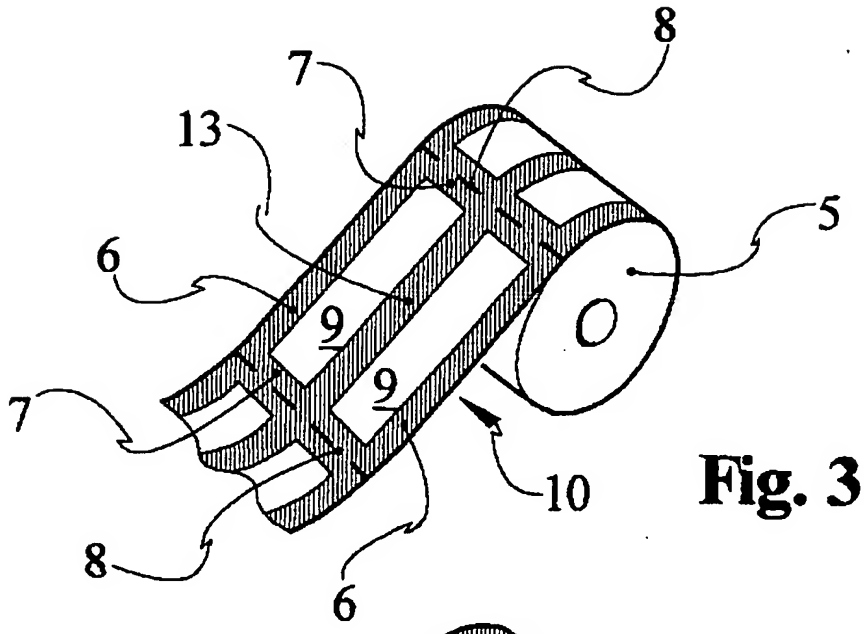


Fig. 3

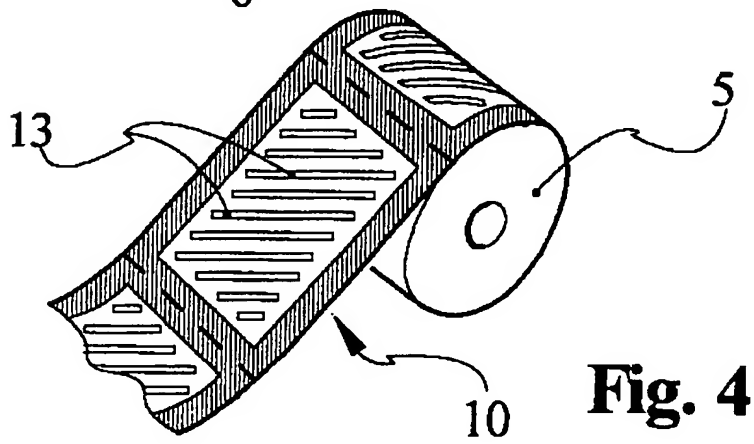


Fig. 4

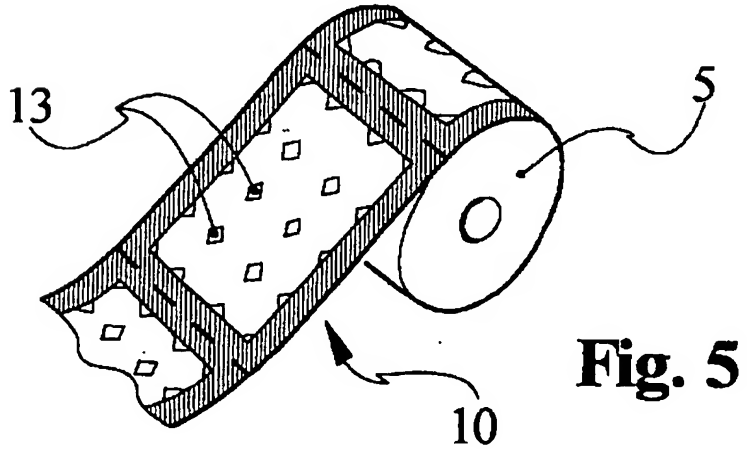


Fig. 5